

## CLAIMS

1. An information processing apparatus for recording an AV stream to a recording medium, said information processing apparatus comprising:

generating means for generating said AV stream constituting each of a plurality of reproduction paths;

controlling means for controlling the generation of said AV stream by said generating means; and

recording means for recording to said recording medium said AV stream generated by said generating means;

wherein said AV stream is constituted by data blocks making up predetermined units; and

wherein said controlling means controls parameters for said AV stream generated by said generating means as well as a layout of said data blocks, in accordance with information indicative of reproducing characteristics in effect when said AV stream recorded on said recording medium is reproduced therefrom.

2. An information processing apparatus according to claim 1, wherein said information indicative of said reproducing characteristics denotes relations between jump distances between said data blocks recorded in separate locations on the hand, and jump times corresponding respectively to said jump distances on the

other hand, for use during reproduction of said AV stream in keeping with said reproduction paths.

3. An information processing apparatus according to claim 1, wherein said parameters for said AV stream under control of said controlling means include a rate of said AV stream.

4. An information processing apparatus according to claim 1, wherein said parameters for said AV stream under control of said controlling means include the number of said reproduction paths.

5. An information processing apparatus according to claim 1, wherein said generating means interleaves said AV stream in such a manner that said plurality of reproduction paths are divided into a predetermined number of said data blocks laid out successively; and

wherein said controlling means determines said number of said data blocks in controlling said layout of the interleaved data blocks.

6. An information processing apparatus according to claim 1, further comprising inputting means for admitting an input operation made by a user;

wherein, in response to said input operation made by said user through said inputting means, said controlling means controls said parameters for said AV

stream generated by said generating means as well as said layout of said data blocks by giving priority to a predetermined parameter among said parameters.

7. An information processing apparatus according to claim 1, further comprising storing means for storing said information indicative of said reproducing characteristics;

wherein said controlling means controls said parameters for said AV stream generated by said generating means as well as said layout of said data blocks on the basis of said information indicative of said reproducing characteristics which is stored in said storing means.

8. An information processing apparatus according to claim 1, further comprising reproducing means for reproducing said AV stream recorded on said recording medium;

wherein said controlling means controls said parameters for said AV stream generated by said generating means as well as said layout of said data blocks, in accordance with said information indicative of said reproducing characteristics in effect when said AV stream is reproduced by said reproducing means.

9. An information processing apparatus according

to claim 1, wherein said controlling means generates first management information which includes map information for indicating locations of entry points of said AV stream and which is used to control AV stream status, said controlling means further generating second management information for managing said reproduction paths by setting up change points of each of said reproduction paths in accordance with said entry points included in said map information; and

wherein said recording means further records said first management information and said second management information to said recording medium.

10. An information processing apparatus according to claim 9, wherein said generating means encodes said AV stream in such a manner that said AV stream concludes within each of segments delimited by said change points; and

wherein said controlling means creates as said map information a correspondence table describing relations of correspondence between presentation timestamps of said entry points on the one hand and packet numbers on the other hand.

11. An information processing apparatus according to claim 10, wherein said generating means encodes said

AV stream in such a manner that each of said segments has a video stream made up of a closed group of packets called the closed GOP starting with an I picture, the first packet of said closed GOP being a video packet; and

wherein said AV stream generated by said generating means is included in a transport stream.

12. An information processing apparatus according to claim 11, wherein, on all said reproduction paths, said generating means uses an identical value representing packet ID's of the video packets in said transport stream as well as an identical value representing packet ID's of audio packets in said transport stream.

13. An information processing apparatus according to claim 11, further comprising source packetizing means for turning said transport stream in each of said segments into source packets;

wherein said recording means records said transport stream which has been turned into source packets in each of said segments by said source packetizing means, to said recording medium as an AV stream file.

14. An information processing apparatus according to claim 10, wherein said correspondence table further includes change information indicating whether it is

possible to change said reproduction paths at each of said entry points; and

wherein said controlling means sets said change points on the basis of said change information.

15. An information processing apparatus according to claim 1, wherein said controlling means generates first management information which includes map information for indicating locations of starting points of said AV stream on each of said reproduction paths as well as locations of entry points of the AV streams and which is used to control AV stream status, said controlling means further generating second management information which includes designation information for designating a starting point and an end point of each of said AV streams and for designating the AV stream for each of said reproduction paths and which is used for reproduction management; and

wherein said recording means further records said first management information and said second management information to said recording medium.

16. An information processing apparatus according to claim 15, wherein said generating means encodes said AV stream in such a manner that said AV stream concludes within each of segments delimited by said change points;

and

wherein said controlling means creates a correspondence table describing relations of correspondence between presentation timestamps of said entry points on the one hand and packet numbers on the other hand.

17. An information processing apparatus according to claim 16, wherein said generating means encodes said AV stream in such a manner that each of said segments has a video stream made up of a closed group of packets called the closed GOP starting with an I picture, the first packet of said closed GOP being a video packet; and

wherein said AV stream generated by said generating means is included in a transport stream.

18. An information processing apparatus according to claim 16, wherein said generating means encodes said AV stream in such a manner that each of said segments has a video stream headed by a closed group of packets called the closed GOP, the rest of said video stream comprising unclosed GOP's.

19. An information processing apparatus according to claim 17, further comprising source packetizing means for turning said transport stream in each of said segments into source packets;

wherein said recording means records said transport stream which has been turned into source packets in each of said segments by said source packetizing means, to said recording medium as an AV stream file.

20. An information processing apparatus according to claim 19, wherein said controlling means creates said correspondence table corresponding to each of the AV stream files.

21. An information processing method for use with an information processing apparatus for recording an AV stream to a recording medium, said information processing method comprising the steps of:

determining parameters for said AV stream as well as a layout of data blocks constituting said AV stream, in accordance with information indicative of reproducing characteristics in effect when said AV stream recorded on said recording medium is reproduced therefrom;

generating said AV stream constituting each of a plurality of reproduction paths based on said parameters for said AV stream and on said layout of said data blocks determined in said determining step along with said parameters; and

controlling the recording of said AV stream generated in said generating step to said recording

medium.

22. A program storage medium which stores a program for causing a computer to record an AV stream to a recording medium, said program comprising the steps of:

determining parameters for said AV stream as well as a layout of data blocks constituting said AV stream, in accordance with information indicative of reproducing characteristics in effect when said AV stream recorded on said recording medium is reproduced therefrom;

generating said AV stream constituting each of a plurality of reproduction paths based on said parameters for said AV stream and on said layout of said data blocks determined in said determining step along with said parameters; and

controlling the recording of said AV stream generated in said generating step to said recording medium.

23. A program for causing a computer to record an AV stream to a recording medium, said program comprising the steps of:

determining parameters for said AV stream as well as a layout of data blocks constituting said AV stream, in accordance with information indicative of reproducing characteristics in effect when said AV stream recorded on

said recording medium is reproduced therefrom;

generating said AV stream constituting each of a plurality of reproduction paths based on said parameters for said AV stream and on said layout of said data blocks determined in said determining step along with said parameters; and

controlling the recording of said AV stream generated in said generating step to said recording medium.